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TITLE: OSCILLATION WAVELENGTH STABILIZED SEMICONDUCTOR LASER DEVICE

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ABSTRACT:

PURPOSE: To improve an optical system in stability and to make a laser device of this design small in size by a method wherein the end of an optical fiber on which light is incident is directly fitted to a light absorbing cell.

CONSTITUTION: An optical fiber 12 enabling light to be incident on the inside of a cell 10 is joined to the absorbing cell 10. The outgoing light emitted from a semiconductor laser module 31 is made incident on an optical wavelength reference absorbing cell 10 from the optical fiber 12 through the intermediary of an optical coupler 34, light of specific wavelength is absorbed, a signal 36 obtained by photoelectrically converting the transmitted light by a photodetector 13 inside the absorbing cell 10 is transmitted to an oscillation wavelength stabilizing feedback circuit 32 to control a current injected into the semiconductor laser module 31. In this case, light can be easily incident on the inside of the cell 10, light absorption can be enhanced as much as intensity as possible, and photodetection can be also improved in sensitivity, so that a laser device small in size and excellent in stability can be realized.